



**Supplementary Figure 6.** Changes in the STAT3 gene expression signature in patients on therapy. Samples for pharmacodynamic (PD) analysis of changes in expression of STAT3 target genes were obtained prior to treatment (Pre-Med; to which all samples were normalized), and then two hours post drug on day 1 of cycle 1 (PD3), one day among days 2 through 5 of therapy (optional; PD4), day 8 (PD5), 15 (PD6), and 22 (PD7) of cycle 1, day 1 (PD8) and 15 (PD9) of cycle 2, and day 1 of subsequent cycles (PD10-18). In a patient (#6) in whom pyrimethamine levels fell over time, expression of STAT3 target genes increased (A). In a patient (#8) in whom pyrimethamine levels increased over time, STAT3 target genes remained suppressed (B). Expression of each of the five STAT3 target genes generally changed concordantly, and were accurately reflected by an arithmetic mean.